

PATENT ABSTRACTS OF JAPAN

(11)Publication number : **2003-126075**

(43)Date of publication of application : **07.05.2003**

(51)Int.Cl. **A61B 6/03**

(21)Application number : **2002-320653** (71)Applicant : **TOSHIBA CORP**
(22)Date of filing : **27.05.1993** (72)Inventor : **KONAKAWA CHIEKO**
NANBU KYOJIRO

(30)Priority

Priority number : **04135044** Priority date : **27.05.1992** Priority country : **JP**

(54) **CT UNIT**

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a CT unit which has much improved inspectional efficiency compared with any other CT unit that has only one tubular bulb. SOLUTION: This CT unit is provided with a first shooting system having a first detector 4-1 to detect X-rays applied from a first X-ray tube 3-1 including those transmitted through a subject, a second shooting system having a second detector 4-2 to detect X-rays applied from a second X-ray tube 4-2 including those transmitted through the subject, and a central processing unit 12 which makes the first and second shooting systems to helically scan on a common path.

LEGAL STATUS

[Date of request for examination] 05.11.2002

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 3441455

[Date of registration] 20.06.2003

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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CLAIMS

[Claim(s)]

[Claim 1] In the X-ray CT scanner which reconfigurates CT image of said analyte based on the projection data which scanned analyte and was obtained The 1st photography system which has the 1st detector for detecting the X-ray which penetrated the 1st X line source and said analyte which carries out exposure of the X-ray, The X-ray CT scanner characterized by having the control means to which the helical scan of the 2nd photography system which has the 2nd detector for detecting the X-ray which penetrated the 2nd X line source and said analyte which carries out exposure of the X-ray, said 1st photography system, and said 2nd photography system is carried out on a common orbit.

[Claim 2] The X-ray CT scanner according to claim 1 characterized by to have a interpolation means performs helical interpolation based on the 2nd projection data constellation obtained by the 1st projection data constellation obtained by said 1st photography system and said 2nd photography system, and acquire the interpolation data of a predetermined slice location, and a reconstruction means to by_which this interpolation means performs image reconstruction of said slice location based on ***** interpolation data.

[Claim 3] Said control means is that to which the helical scan of the orbit same after said 1st photography system carries out helical scan as the orbit which said 1st photography system scanned is carried out by said 2nd photography system. The 1st tomogram for a predetermined location is reconfigured based on the 1st projection data constellation obtained by the helical scan of said 1st photography system. A reconstruction means to reconfigure the 2nd tomogram for said predetermined slice location based on the 2nd projection data constellation obtained by the helical scan of said 2nd photography system, The X-ray CT scanner according to claim 1 characterized by having further a display means to display the 2nd tomogram for said predetermined

location after displaying the 1st tomogram for said predetermined location.

[Claim 4] In the X-ray CT scanner which reconfigurates CT image of said analyte based on the projection data which scanned analyte and was obtained The 1st photography system which has the 1st detector for detecting the X-ray which penetrated the 1st X line source and said analyte which carries out exposure of the X-ray, The 2nd photography system which has the 2nd detector for detecting the X-ray which penetrated the 2nd X line source and said analyte which carries out exposure of the X-ray, The X-ray CT scanner characterized by having the control means which makes said 2nd photography system scan on the photography conditions of said 1st photography system when an error is produced while said 1st photography system scanned.

[Claim 5] In the X-ray CT scanner which reconfigurates CT image of said analyte based on the projection data which scanned analyte and was obtained The 1st photography system which has the 1st detector for detecting the X-ray which penetrated the 1st X line source and said analyte which carries out exposure of the X-ray, The 2nd photography system which has the 2nd detector for detecting the X-ray which penetrated the 2nd X line source and said analyte which carries out exposure of the X-ray, The X-ray CT scanner characterized by having the control means which changes the energy of the X-ray irradiated from the 1st X-ray tube of said 1st photography system, and the energy of the X-ray irradiated from the 2nd X-ray tube of said 2nd photography system, and makes the same location of said photographic subject scan.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The conceptual diagram of the X-ray CT scanner which is 1 operation gestalt of a CT scanner based on this invention.

[Drawing 2] An example of the block diagram of the control section in the operation gestalt of drawing 1 and a scan condition list is shown.

[Drawing 3] A partial diagrammatic view A shows an example of a helical dynamic scan, a partial diagrammatic view B shows two or more head images photoed with time by the helical dynamic scan, and a partial diagrammatic view C shows the example of the cinedisplay which met aging by the three-dimension image with a helical dynamic scan.

[Drawing 4] The example which doubled the bulb with the spiral orbit of helical scan is shown.

[Drawing 5] The example which shifted whenever [champing-angle / of each bulb] is shown.

[Drawing 6] Partial diagrammatic views A are two or more photography conditions, the example which scanned the same range as the almost same time amount is shown, and a partial diagrammatic view B shows the image obtained as a result.

[Drawing 7] The example which scanned other parts on the scan conditions according to a part to coincidence is shown.

[Drawing 8] a partial diagrammatic view A shows the helical scan since ** which performs a spiral scan by one bulb, and a partial diagrammatic view B shows the case where the same part is scanned by two bulbs by this invention.

[Drawing 9] A partial diagrammatic view A is a perspective view showing the example of the scan by the conventional helical scan CT scanner, a partial diagrammatic view B is a side elevation, and a partial diagrammatic view C is drawing foreseen from the stand.

[Drawing 10] The example photoed using two or more gantries is shown.

[Description of Notations]

1 X-ray CT Scanner (CT Scanner)

2 Stand

3-1, 3-2, 3-3 Bulb

4-1, 4-2, 4-3 Detector

11 Berth

10 Berth Mechanical Component

12 Control Section

[Translation done.]

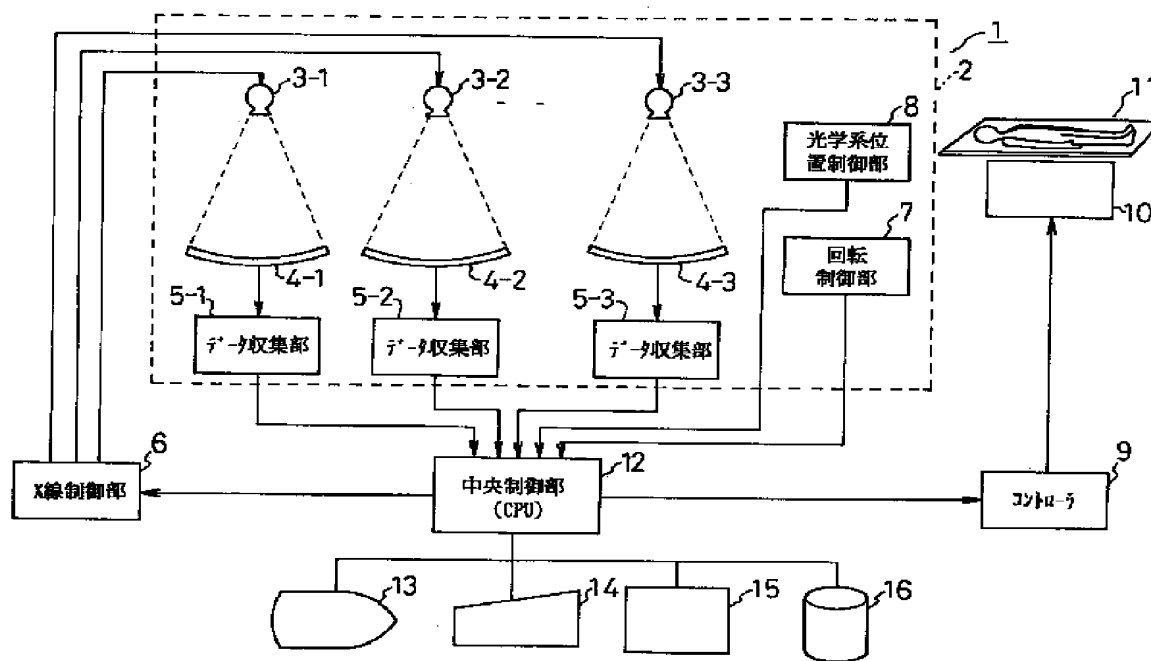
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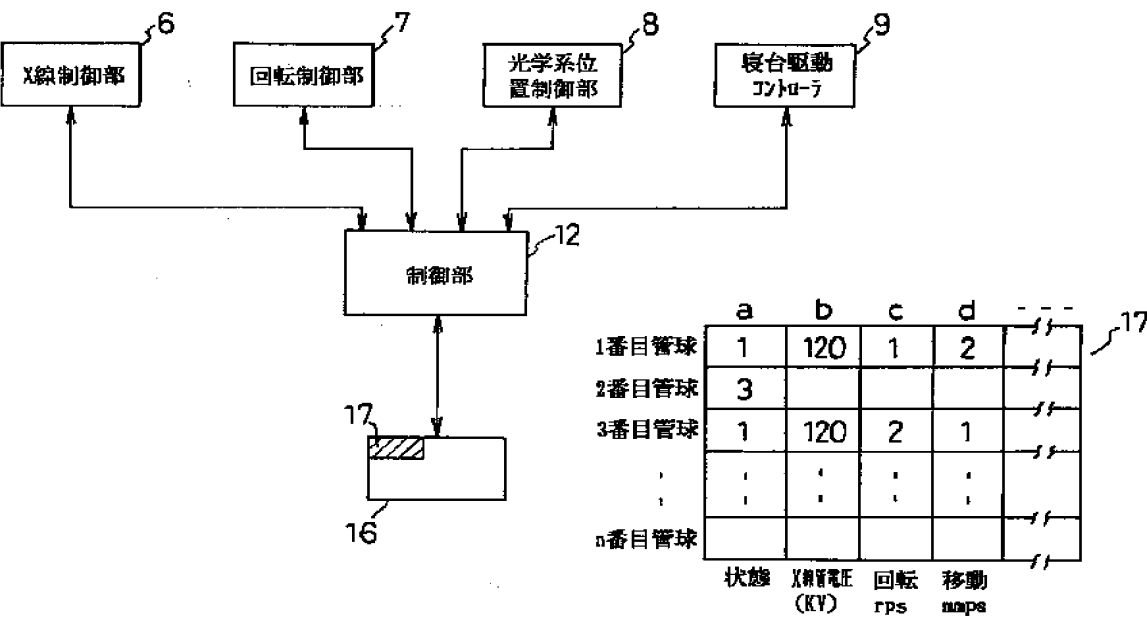
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DRAWINGS

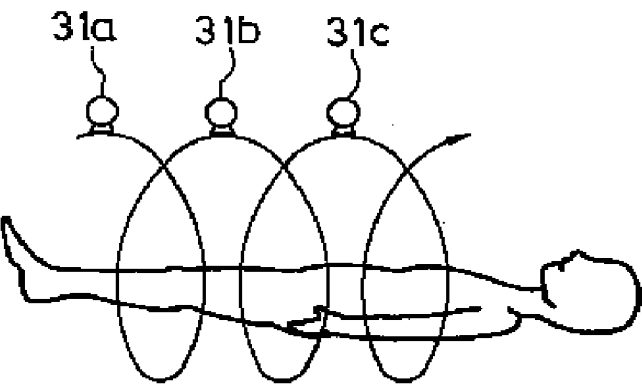
[Drawing 1]



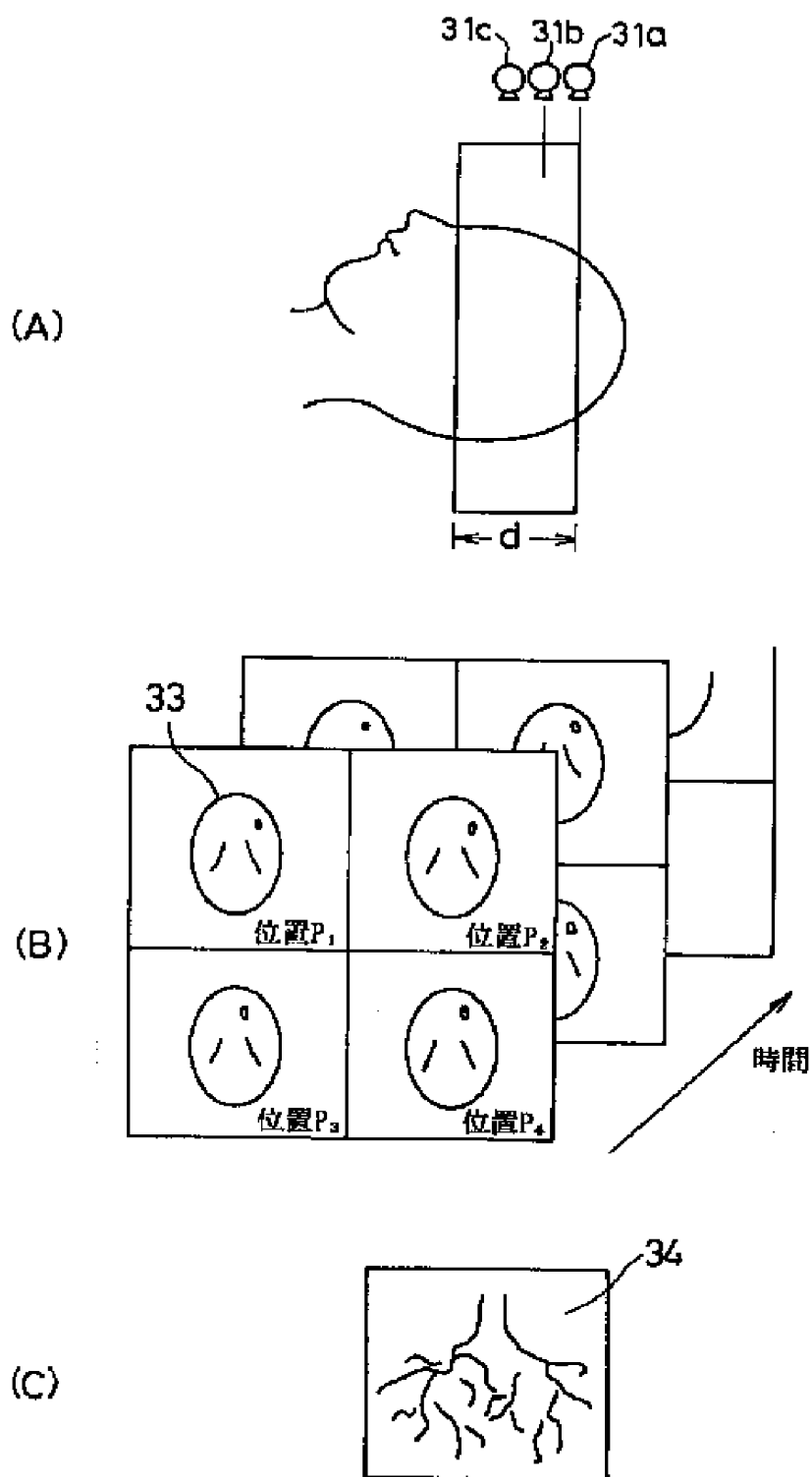
[Drawing 2]



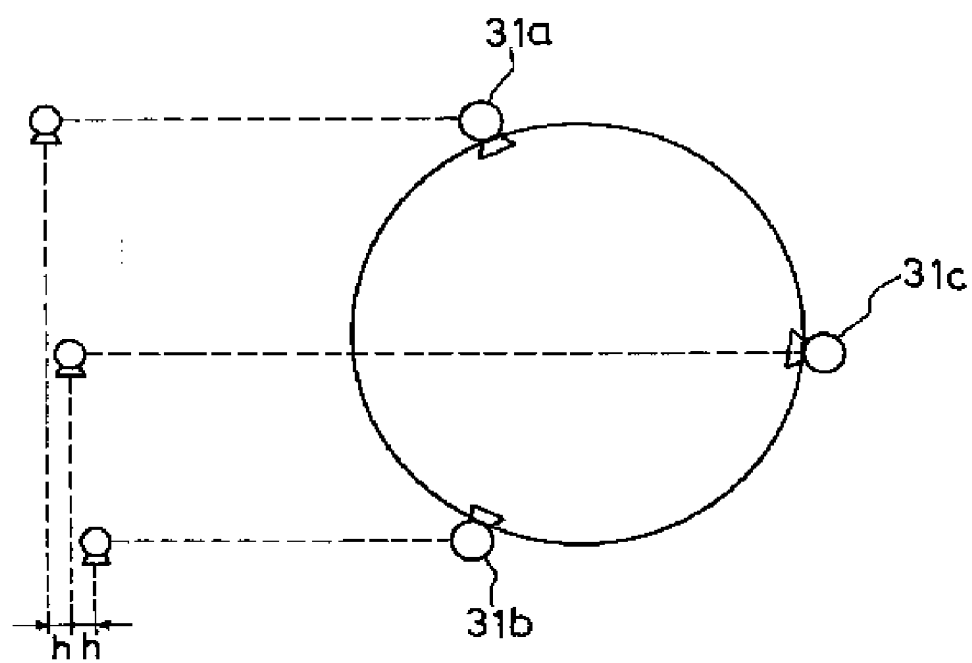
[Drawing 4]



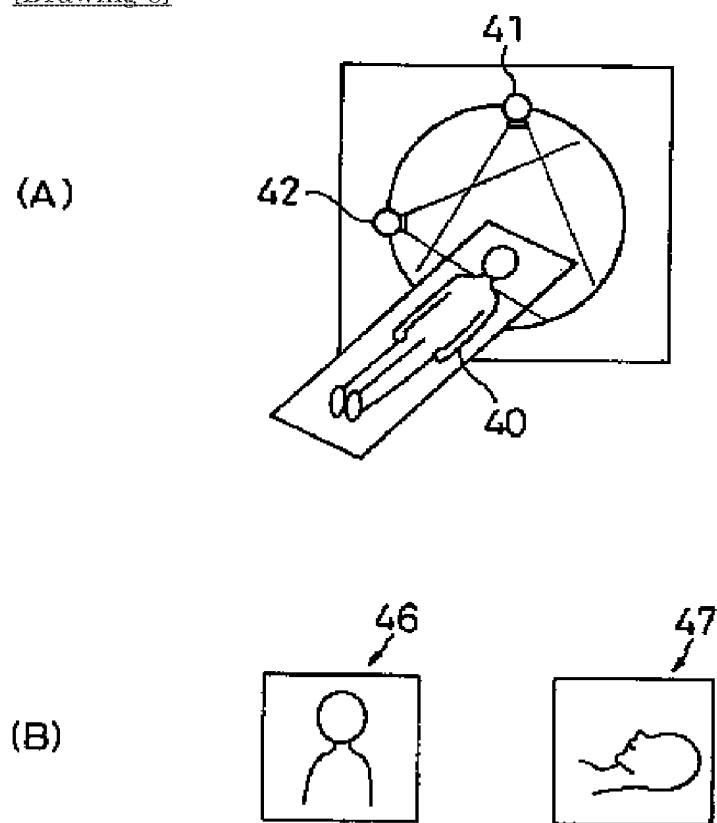
[Drawing 3]



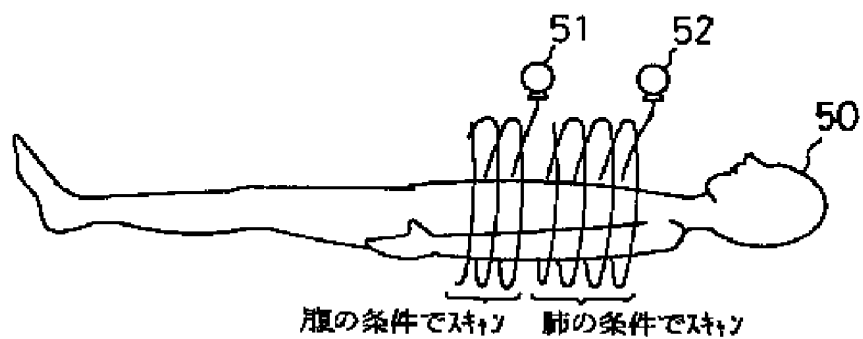
[Drawing 5]



[Drawing 6]

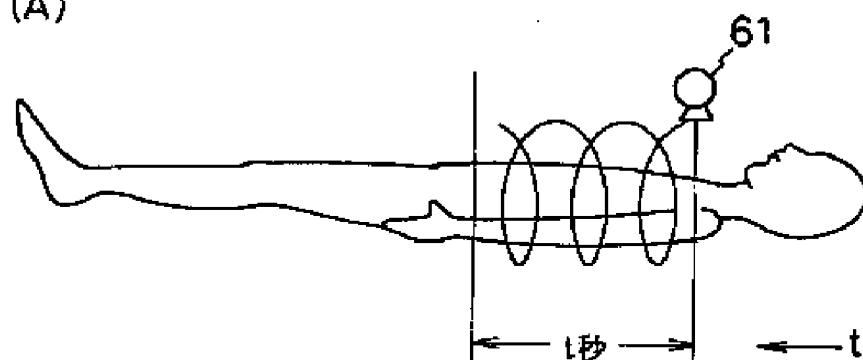


[Drawing 7]

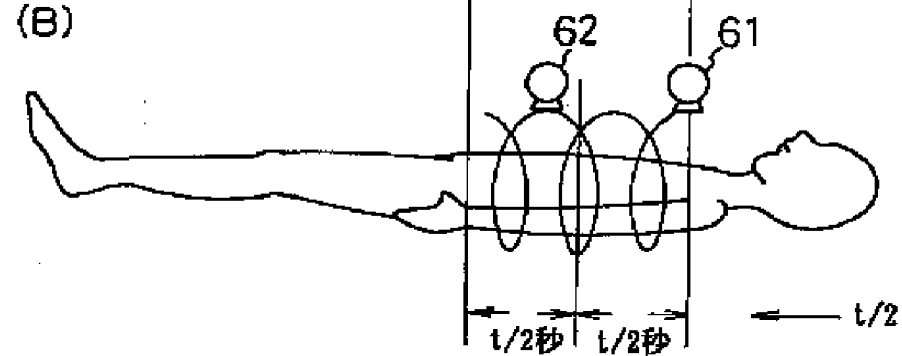


[Drawing 8]

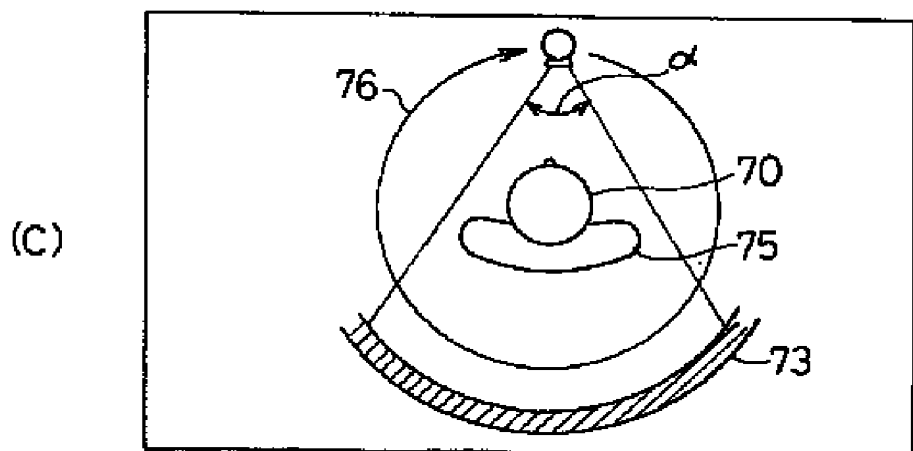
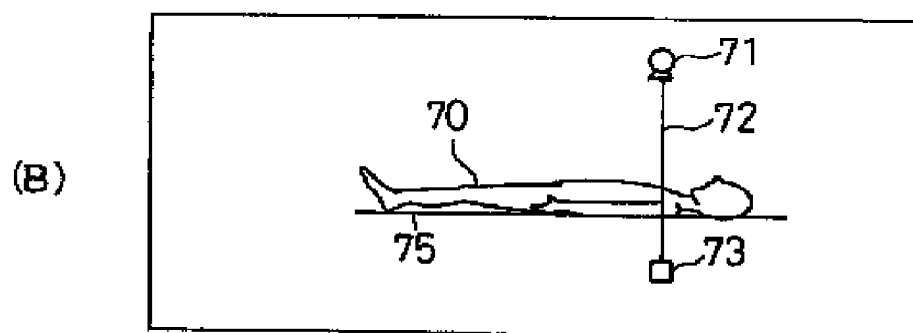
(A)



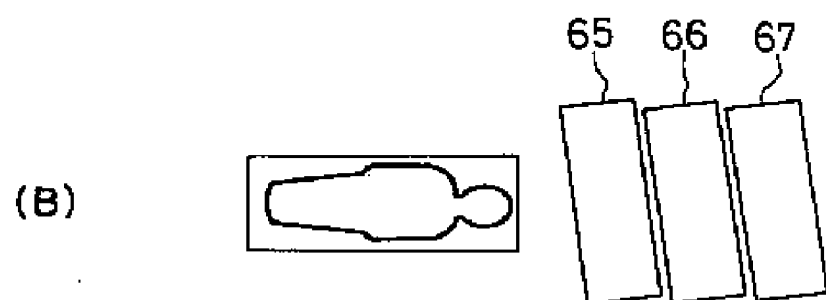
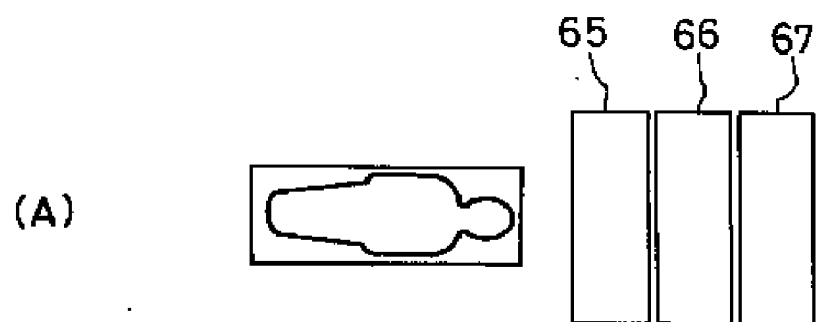
(B)



[Drawing 9]



[Drawing 10]



[Translation done.]